Application No. 10/717,006
Atty. Docket No. 2003B112
Reply to OA mailed July 17, 2006
Amendment dated November 17, 2006

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listing of claims in this application.

Listing of Claims:

1. (Currently Amended) A process for converting an alcohol-containing stream to light olefins, wherein the process comprises the steps of:

(a) providing methanol and ethanol to a reaction zone, wherein the weight ratio of methanol to ethanol is from about ~~5:33~~ 4:1 to about ~~9:33~~ 9:1; and

(b) contacting the methanol and the ethanol in the reaction zone with a silicoaluminophosphate molecular sieve catalyst composition at a temperature ~~of at least~~ from 475°C to 500°C to convert the methanol and ethanol to the light olefins at an ethylene to propylene weight ratio of at least 1.25.

2-5. (Canceled)

6. (Original) The process of claim 1, wherein the molecular sieve catalyst composition comprises a molecular sieve selected from the group consisting of: MeAPSO, SAPO-5, SAPO-8, SAPO-11, SAPO-16, SAPO-17, SAPO-18, SAPO-20, SAPO-31, SAPO-34, SAPO-35, SAPO-36, SAPO-37, SAPO-40, SAPO-41, SAPO-42, SAPO-44, SAPO-47, SAPO-56, AEI/CHA intergrowths, metal containing forms thereof, intergrown forms thereof, and mixtures thereof.

7. (Original) The process of claim 1, wherein the methanol and ethanol are formed by contacting syngas with a synthesis catalyst under conditions effective to form the methanol and the ethanol.

8. (Original) The process of claim 7, wherein the synthesis catalyst comprises an alkali-treated metal sulfide.

9. (Original) The process of claim 1, wherein the methanol and ethanol is formed in a synthesis zone containing a methanol synthesis catalyst and an ethanol synthesis catalyst in a weight ratio of from about 1.0 to about 5.0.

10. (Original) The process of claim 9, wherein the weight ratio of methanol synthesis catalyst to ethanol synthesis catalyst is from about 2.0 to about 4.0.

11. (Original) The process of claim 1, wherein the process further comprises the step of:

(c) contacting syngas with a methanol synthesis catalyst and an ethanol synthesis catalyst under conditions effective to convert the syngas to the methanol and the ethanol.

12. (Original) The process of claim 11, wherein the methanol synthesis catalyst comprises a metal oxide.

13. (Original) The process of claim 11, wherein the ethanol synthesis catalyst comprises an alkali-treated metal sulfide.

14. (Original) The process of claim 11, wherein the process further comprises the step of:

(d) contacting a natural gas stream with oxygen in a syngas generation zone under conditions effective to convert the natural gas stream into the syngas.

15-16. (Canceled)

17. (Original) The process of claim 1, wherein the methanol and the ethanol are directed to the reaction zone in an alcohol-containing stream comprising from about 0.1 to about 10.0 weight percent water, based on the total weight of the alcohol-containing stream.

18. (Currently Amended) A process for producing light olefins, the process comprising the steps of:

(a) contacting a syngas stream comprising carbon monoxide, carbon dioxide and hydrogen with a methanol synthesis catalyst and an ethanol synthesis catalyst in a synthesis zone under first conditions effective to form a first alcohol-containing stream comprising methanol and ethanol, wherein the first alcohol-containing stream has a methanol to ethanol weight ratio from about ~~5.33~~ 4:1 to about ~~9.33~~ 9:1; and

(b) contacting the methanol and the ethanol in the reaction zone with a silicoaluminophosphate molecular sieve catalyst composition at a temperature ~~of at least~~

from 475°C to 500°C to convert the methanol and ethanol to the light olefins at an ethylene to propylene weight ratio of at least 1.25.

19. (Original) The process of claim 18, wherein the first alcohol-containing stream further comprises water, the process further comprising the step of:

(c) removing a weight majority of the water from the first alcohol-containing stream to form a second alcohol-containing stream comprising a weight majority of the methanol and the ethanol that was present in the first alcohol-containing stream.

20. (Original) The process of claim 19, wherein the second alcohol-containing stream comprises from about 0.1 to about 10.0 weight percent water, based on the total weight of the second alcohol-containing stream.

21. (Original) The process of claim 19, wherein the process further comprises the step of:

(d) removing a weight majority of the light ends from the first alcohol-containing stream or from the second alcohol-containing stream, wherein the light ends comprises one or more of hydrogen, carbon monoxide and carbon dioxide.

22. (Original) The process of claim 18, wherein the molecular sieve catalyst composition comprises a molecular sieve selected from the group consisting of: MeAPSO, SAPO-5, SAPO-8, SAPO-11, SAPO-16, SAPO-17, SAPO-18, SAPO-20, SAPO-31, SAPO-34, SAPO-35, SAPO-36, SAPO-37, SAPO-40, SAPO-41, SAPO-42, SAPO-44, SAPO-47, SAPO-56, AEI/CHA intergrowths, metal containing forms thereof, intergrown forms thereof, and mixtures thereof.

23-26. (Canceled)

27. (Original) The process of claim 18, wherein the first conditions comprise a reaction temperature of from about 204°C to about 260°C.

28. (Original) The process of claim 18, wherein the ethanol synthesis catalyst comprises an alkali-treated metal sulfide.

29. (Original) The process of claim 18, wherein the methanol synthesis catalyst comprises a metal oxide.

30. (Original) The process of claim 18, wherein the ethanol synthesis catalyst comprises an alkali-treated metal sulfide.

31. (Original) The process of claim 18, wherein the synthesis zone has a weight ratio of methanol synthesis catalyst to ethanol synthesis catalyst of from about 1.0 to about 5.0.

32. (Original) The process of claim 31, wherein the weight ratio of methanol synthesis catalyst to ethanol synthesis catalyst is from about 2.0 to about 4.0.

33. (Original) The process of claim 18, wherein the process further comprises the step of:

(c) contacting a natural gas stream with oxygen in a syngas generation zone under conditions effective to convert the natural gas stream into the syngas stream.

34-74. (Canceled)